AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. **(Currently Amended)** An isolated nucleic acid molecule comprising a sequence of nucleotides encoding or complementary to a sequence encoding a mammalian transcription factor comprising ~~an amino acid sequence selected from SEQ ID NO:8 (human SOM), SEQ ID NO: 16 (murine SOM) and~~ an amino acid sequence having at least 75% identity to SEQ ID NO:8 (human SOM) or SEQ ID NO: 16 (murine SOM) after optimal alignment.

2. **(Currently Amended)** The isolated nucleic acid molecule of claim 1 wherein the ~~mammalian transcription factor is encoded by a nucleotide sequence having at least 75% identity after optimal alignment to one or more~~ molecule has a nucleotide sequence selected from the group consisting of: SEQ ID NO: 7 (human *som*), ~~or~~ SEQ ID NO: 15 (murine *som*), ~~or~~ and a nucleotide sequence capable of hybridizing to SEQ ID NO: 7, SEQ ID NO:15 or a complementary form ~~thereof~~ of any of the foregoing under high stringency conditions (0.1X SSC, 0.1% w/v SDS at 65°C).

3. **(Currently Amended)** The isolated nucleic acid molecule of claim 1 ~~or 2~~ encoding a polypeptide comprising an amino acid sequence selected from SEQ ID NO: 8 or SEQ ID NO: 16.

4. **(Original)** The isolated nucleic acid molecule of claim 1 comprising a nucleotide sequence selected from SEQ ID NO: 7 and SEQ ID NO: 15.

5. **(Currently Amended)** ~~An~~ The isolated nucleic acid molecule of Claim 1 comprising the nucleotide sequence set forth in SEQ ID NO: 7.

6. **(Currently Amended)** ~~An~~ The isolated nucleic acid molecule of Claim 1 comprising the nucleotide sequence set forth in SEQ ID NO: 15.

7. **(Currently Amended)** ~~Use of~~ A pharmaceutical composition for the treatment of a genetic or physiological disorder, comprising:

an isolated nucleic acid molecule comprising a sequence of nucleotides encoding or complementary to a sequence encoding a mammalian homolog of *Drosophila grh* wherein the nucleic acid molecule encodes a transcription factor selected from the group consisting of: human SEQ ID NO: 2 (MGR p49), SEQ ID NO: 4 (human MGR p70), SEQ ID NO: 6 (human BOM), SEQ ID NO: 7 (human SOM), SEQ ID NO: 10 (murine MGR p61), SEQ ID NO: 12 (murine MGR p70), SEQ ID NO: 14 (murine BOM) and SEQ ID NO: 16) murine SOM) ~~or~~ , a

transcription factor having at least 65% identity to SEQ ID NO: 2, a transcription factor having at least 65% identity to SEQ ID NO: 4, a transcription factor having at least 65% identity to SEQ ID NO: 6, a transcription factor having at least 65% identity to SEQ ID NO: 7, a transcription factor having at least 65% identity to SEQ ID NO: 10, a transcription factor having at least 65% identity to SEQ ID NO: 12, a transcription factor having at least 65% identity to SEQ ID NO: 14 ~~or~~ , and a transcription factor having at least 65% identity to SEQ ID NO: 16 after optimal alignment in an amount effective to treat said genetic or physiological disorder ~~in the manufacture of a medicament for the treatment of spinabifida or other physiological or genetic disorder~~.

8. **(Currently Amended)** ~~Use~~ The pharmaceutical composition of claim 7 wherein the mammalian homolog comprises a nucleotide sequence having at least 75% identity after optimal alignment to one or more of the sequences selected from the group consisting of: SEQ ID NO: 17, SEQ ID NO: 34, SEQ ID NO: 36 and SEQ ID NO: 38 or comprises a nucleotide sequence capable of hybridizing to a sequence selected from the group consisting of: SEQ ID NO: 17, SEQ ID NO: 34, SEQ ID NO: 36 ~~and/or~~ SEQ ID NO: 38, and ~~or~~ a complementary form thereof under ~~stringency~~ stringent conditions.

9. **(Currently Amended)** ~~Use~~ The pharmaceutical composition of claim 7 wherein the nucleic acid molecule comprises a sequence of nucleotides encoding a polypeptide having transcription factor activity and comprising an amino acid sequence selected from the group consisting of: SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14 and SEQ ID NO: 16.

10. **(Currently Amended)** ~~Use~~ The pharmaceutical composition of claim 7 wherein the nucleic acid molecule comprises a nucleotide sequence selected from the group consisting of: SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, SEQ ID NO: 11, SEQ ID NO: 13 and SEQ ID NO: 15.

11. **(Currently Amended)** A method of identifying a nucleotide sequence likely to encode a M-GRH transcription factor, said method comprising:

interrogating a mammalian genome database conceptually translated into different reading frames with an amino acid sequence defining *Drosophila GRH* or any one of the sequences selected from the group consisting of: SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10, SEQ ID NO: 12, SEQ ID NO: 14 AND SEQ ID NO: 16; and

identifying a nucleotide sequence corresponding to an amino acid sequence having at least about 70% similarity to *Drosophila GRH* or to any one of the sequences selected from the group consisting of: SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10, SEQ ID NO: 12 SEQ ID NO: 14 and SEQ ID NO: 16; and ~~then~~

determining that the nucleotide sequence exhibits a restricted pattern of expression.

12. **(Currently Amended)** ~~Use~~ A method for treating spinabifida or other physiological or genetic disorders in a patient, comprising

~~Use of~~ administering to said patient an isolated mammalian transcription factor which is a homolog of *Drosophilia* grainyhead (GRH) selected from the group consisting of: human SEQ ID NO: 2 (MGR p49), SEQ ID NO: 4 (human MGR p70), SEQ ID NO: 6 (human BOM), SEQ ID NO: 8 (human SOM), SEQ ID NO: 10 (murine MGR p61), SEQ ID NO: 12 (murine MGR p70), SEQ ID NO: 14 (murine BOM) and SEQ ID NO:16 (murine SOM) ~~and~~ , a molecule having at least 75% identity to SEQ ID NO: 2, a molecule having at least 75% identity to SEQ ID NO: 4, a molecule having at least 75% identity to SEQ ID NO: 6, a molecule having at least 75% identity to SEQ ID NO: 8, a molecule having at least 75% identity to SEQ ID NO: 10, a molecule having at least 75% identity to SEQ ID NO: 12, a molecule having at least 75% identity to SEQ ID NO: 14, and a molecule having at least 75% identity to SEQ ID NO: 16 after optimal alignment in ~~the manufacture of a medicament~~ an amount effective for the treatment of spinabifida or other physiological or genetic disorder.

13. **(Currently Amended)** A method for detecting an embryo with a propensity to develop spinabifida said method comprising:

contacting said embryo or a cell therefor with agents capable of detecting the level of expression of a transcription factor selected from the group consisting of: human SEQ ID NO: 2 (MGR p49), SEQ ID NO: 4 (human MGR p70), SEQ ID NO: 6 (human BOM), SEQ ID NO: 8 (human SOM), SEQ ID NO: 10 (murine MGR p61), SEQ ID NO: 12 (murine MGR p70), SEQ ID NO: 14 (murine BOM) and SEQ ID NO: 16 (murine SOM), ~~and~~ a molecule having at least 75% identity to SEQ ID NO: 2, a molecule having at least 75% identity to SEQ ID NO: 4, a molecule having at least 75% identity to SEQ ID NO: 6, a molecule having at least 75% identity to SEQ ID NO: 8, a molecule having at least 75% identity to SEQ ID NO: 10, a molecule having at least 75% identity to SEQ ID NO: 12, a molecule having at least 75% identity to SEQ ID NO: 14 ~~or~~ , and a molecule having at least 75% identity to SEQ ID NO: 16 after optimal alignment.

14. **(Currently Amended)** An animal model comprising a genetically modified animal comprising a nucleotide insertion, deletion, addition and/or substitution in a nucleic acid molecule comprising a nucleotide sequence having at least 75% identity after optimal alignment to one or more of the polynucleotides selected from the group consisting of: SEQ ID NO: 7 (human *som*), ~~or~~ SEQ ID NO: 15 (murine *som*), ~~or~~ a nucleotide sequence capable of hybridizing to SEQ ID NO: 7 ~~or~~ a nucleotide sequence capable of hybridizing to SEQ ID NO:15, and ~~or~~ a complementary form thereof under ~~stringency~~ stringent conditions ~~of claim 2~~.

15. **(Original)** A medical assessment system comprising the animal model of claim 14.

16. **(New)** The pharmaceutical composition of Claim 7, wherein said genetic disorder is spinabifida.

17. **(New)** An isolated polypeptide comprising an amino acid sequence having at least 60% identity to SEQ ID NO:8 (human SOM) or SEQ ID NO:16 (murine SOM) after optimal alignment.

18. **(New)** The isolated polypeptide of Claim 17 comprising SEQ ID NO:8 or SEQ ID NO:16.

19. **(New)** The isolated polypeptide of Claim 17, wherein said polypeptide has a nucleotide sequence selected from the group consisting of: SEQ ID NO:7 (human SOM), SEQ ID NO:15 (murine SOM), and a nucleotide sequence capable of hybridizing to SEQ ID NO:7, SEQ ID NO:15 or a complementary form of any of the foregoing under high stringency conditions (0.1X SSC, 0.1% w/v SDS at 65°C).

20. **(New)** A pharmaceutical composition for the treatment of a patient with a genetic or physiological disorder, comprising:

the isolated polypeptide of claim 17 and a pharmaceutically acceptable carrier and/or diluent.

21. **(New)** A method for treating spinabifida or other physiological or genetic disorders in a patient, comprising:

administering to said patient the isolated polypeptide of Claim 17 in an amount effective for the treatment of said disorder.